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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,772	09/15/2003	Yoav Hollander	MR3529-22	7242

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EXAMINER
WANG, RONGFA PHILIP

ART UNIT	PAPER NUMBER
2191	

NOTIFICATION DATE	DELIVERY MODE
05/12/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/661,772	HOLLANDER ET AL.
	Examiner	Art Unit	
	PHILIP WANG	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 March 2009</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-23</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to amendment filed on 3/23/2009.

2.   Per Applicant's request, claims 1, 2 and 23 have been amended.

3.   Claims 1-23 remain pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-6, 14-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Noy (USPGN 2002/0040457) in view of Srinivasan et al. (USPTN 6,499,129).

As per claim 1,

Noy discloses

> A method stored on a computer readable medium including computer executable
>
> instructions for automatically generating at least one test program from a set of
>
> scenarios for testing a simulation model of a device under test (DUT) in a test
>
> environment during a test verification process(see Fig. 1), the method comprising:
>
> providing a plurality of scenarios, each scenario containing at least one operation and at
>
> least one constraint indicative of compatibility with at least one other scenario;

selectively defining a set of scenarios from said plurality of scenario according to said

constraints thereof by resolving conflicts among said constraints said set of scenarios

([0058], "...properly analyzed during test generation, all paths or

roles...should be analyzed in relationship to each

constraint..."; [0060], "...explicit roles have been analyzed and

included for the test generation..."; [0060], "... after the roles

have been determined, preferably the constraints are resolved..."

where roles or paths are scenarios.);

automatically generating the test program by combining said set of scenarios to provide

at least one operation as input for driving simulated operation of the DUT([0060],

"...explicit roles have been analyzed and included for the test

generation...";[0003], "...for a device under

testing(DUT)...simulation model of the device...").

Noy does not specifically disclose

Resolving conflict by excluding conflicting scenarios;

However, Srinivasan discloses

Resolving conflict by excluding conflicting scenarios(c7: 42-45,

"...generate true vectors that do not cause a conflict...Conflicting

or false paths cause problems during simulation...");

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to incorporate the teachings of Srinivasan into the teachings of Noy to

include the limitation disclosed by Srinivasan. The modification would be obvious to one of

ordinary skill in the art to want to avoid problem during simulation by excluding conflicting

scenarios (c7:46-48, "Conflicting or false paths cause problems during simulation...").

As per claim 2,   the rejection of claim 1 is incorporated;

Noy discloses

   Selectively defining a set of scenarios comprising: selecting a number of said plurality of

   scenarios according to meta-data contained in at least one scenario; and combining said

   number of said plurality of scenarios to form a combined scenario instance([0058],

   "...all paths or roles for a particular struct element should be

   analyzed in relationship to each constraint...").

As per claim 3,   the rejection of claim 2 is incorporated;

Noy discloses

   wherein at least one selected scenario comprises a sequence([0010],

   "...generating...test pattern...").

As per claim 4,   the rejection of claim 3 is incorporated;

Noy/ Srinivasan discloses

at least one selected scenario conflicts with at least one non-selected scenario and

wherein said meta- data comprises information about said conflict (continue from

rejection of claim 1, where one conflicting scenario is not

included and therefore non-selected.)

As per claim 5,   the rejection of claim 1 is incorporated;

Noy discloses

said selecting at least one of said plurality of scenarios is performed at least partially

according to a configuration of the DUT ([0060], "…explicit roles have been

analyzed and included for the test generation…"; [0003], "…for a

device under testing(DUT)...simulation model of the device...").

As per claim 6,   the rejection of claim 1 is incorporated;

Noy discloses

said providing said scenarios is performed during a scenario creation process ([0060],

"…explicit roles have been analyzed and included for the test

generation…";)

As per claim 14,   the rejection of claim 1 is incorporated;

Noy discloses

said generating the test is performed according to an at least partially randomized

process ([0008], "…enables directed random generation…").

 As per claim 15,   the rejection of claim 14,

Noy discloses

> said randomized process is based upon a plurality of constraints, and wherein said
>
> plurality of constraints is provided in said selected scenario ([0041], "Contraints
>
> which are applied throught the test generation…"; [0044], "…for
>
> random directed test generation…").

As per claim 16,   the rejection of claim 1 is incorporated;

Noy discloses

> wherein said generating the test is performed according to said at least one
>
> constraint(([0041], "Contraints which are applied throughout the
>
> test generation…";).

As per claim 17,   the rejection of claim 16 is incorporated;

Noy discloses

> each constraint defines a type of expected input variable and a type of operation to be
>
> performed, on said type of expected input variable ([0021], "…constraints…one
>
> function for operation on the at least one data element").

As per claim 18,   the rejection of claim 17 is incorporated;

Noy discloses

> said constraint comprises a static constraint on a value of said type of expected input
>
> variable(`[0013]`, `"constraint can be restrict the possible`
>
> `values…"`).

As per claim 19,   the rejection of claim 17 is incorporated;

Noy discloses

> said constraint comprises a dynamic constraint on a value of said type of expected input
>
> variable(`[0071]`, `"…dynamically set to the value…"`).

As per claim 20,   the rejection of claim 17 is incorporated;

Noy discloses

> said at least one type of expected input variable is at least partially determined according
>
> to a simulation model of the DUT(`[0008]`, `"…generate test vectors in`
>
> `concurrence with…the DUT…"`).

As per claim 21,   the rejection of claim 1 is incorporated;

Noy discloses

at least one characteristic of said constraint determines whether said constraint conflicts

with another constraint([0060], "…constraints are resolved…" it needs

resolution because of conflict.).

As per claim23,   the rejection of claim 1 is incorporated;

Noy/Srinivasan discloses

The selecting at least one of said plurality of scenarios according to said at least one

constraint is accomplished by automatically selecting a subset of said plurality of

scenarios by resolving said constraints of said plurality of scenarios to include in

the selected subset only non-conflicting scenarios(as explain in rejection of

claim 1)

5.   Claims 7-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noy

(USPGN 2002/0040457) in view of Srinivasan et al. (USPTN 6,499,129) and further in view of

over Hollander (USPN 6,182,258).

 As per claim 7,

the rejection of claim 6 is incorporated;

Noy/ Srinivasan does not specifically disclose

a user performs said scenario creation process;

However, Hollander discloses

a user performs said scenario creation process`(c5: 8-12, "…The user has full`

`control of…generation process.")`.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to incorporate the teachings of Hollander into the teachings of Noy/

Srinivasan to include the limitation disclosed by Hollander. The modification would be obvious

to one of ordinary skill in the art to want to be able to control the test generation process by

allowing user control so user experience/knowledge can be applied for the process.

As per claim 8,   the rejection of claim 1 is incorporated;

Noy/ Srinivasan does not specifically disclose

said providing said plurality of scenarios is performed by a user;

Hollander discloses

said providing said plurality of scenarios is performed by a user`(c5: 8-12, "…The`

`user has full control of…generation process.")`.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to incorporate the teachings of Hollander into the teachings of Noy/

Srinivasan to include the limitation disclosed by Hollander. The modification would be obvious

to one of ordinary skill in the art to want to be able to control the test generation process by

allowing user control so user experience/knowledge can be applied for the process.

As per claim 9,   the rejection of claim 1 is incorporated;

Noy/ Srinivasan does not specifically disclose

> Generating at least one external file according to said at least one scenario;

Hollander discloses

> Generating at least one external file according to said at least one scenario `(c9: 1-5,`
>
> `"…test files…")`.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings Hollander into the teachings of Noy/Srinivasan to include the limitation disclosed by Hollander. The modification would be obvious to one of ordinary skill in the art to want to store test simulation information in an external file so it can be stored for future testing.

As per claim 10,   the rejection of claim 9 is incorporated;

Hollander discloses

> Using said at least one external file at run time for running the test `(c9: 1-5,  "…test`
>
> `files…is used to run tests")`.

As per claim 11,   The method of claim 10 further comprising:

Hollander discloses

> compiling said at least one external file before said using said at least one external
>
> file `(c14: 58-62,  "…or compiled…")`.

As per claim 12,   the rejection of claim 10 is incorporated;

Hollander discloses

> wherein said generating said at least one external file is performed before or
>
> concurrently with said generating said test `(c9:3-7, "…test file is uses to`
>
> `run tests." Therefore it at least concurrently.).`

As per claim 13,   the rejection of claim 10 is incorporated;

Hollander discloses

> wherein said external file comprises an HDL (hardware description language) file for
>
> configuring the simulation model `(c5: 52-56, "…support…HLVA…).`

As per claim 22,   the rejection of claim 1 is incorporated;

Noy/ Srinivasan does not specifically disclose

> the simulation model comprises a plurality of variables,   wherein at least one scenario
>
> comprises a monitoring operation for monitoring behavior of the simulation model and
>
> wherein said monitoring operation comprises sampling at least one value of at least one
>
> variable of the simulation model.

Hollander discloses

the simulation model comprises a plurality of variables `(c10: 3-8, Verilog variables…")`, wherein at least one scenario comprises a monitoring operation for monitoring behavior of the simulation model and wherein said monitoring operation comprises sampling at least one value of at least one variable of the simulation model`(c3: 29-34, "…sample the device model…")`.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Hollander into the teachings of Noy/ Srinivasan to include the limitation disclosed by Hollander. The modification would be obvious to one of ordinary skill in the art to want to shape next test stimuli applied to test device by monitoring operation as suggest by Hollander (c3: 32-35).

Response to Arguments

6.   Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Wang whose telephone number is 571-272-5934. The examiner can normally be reached on Mon - Fri 8:00 - 4:00PM. Any inquiry of general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Philip R. Wang/   5/7/2009